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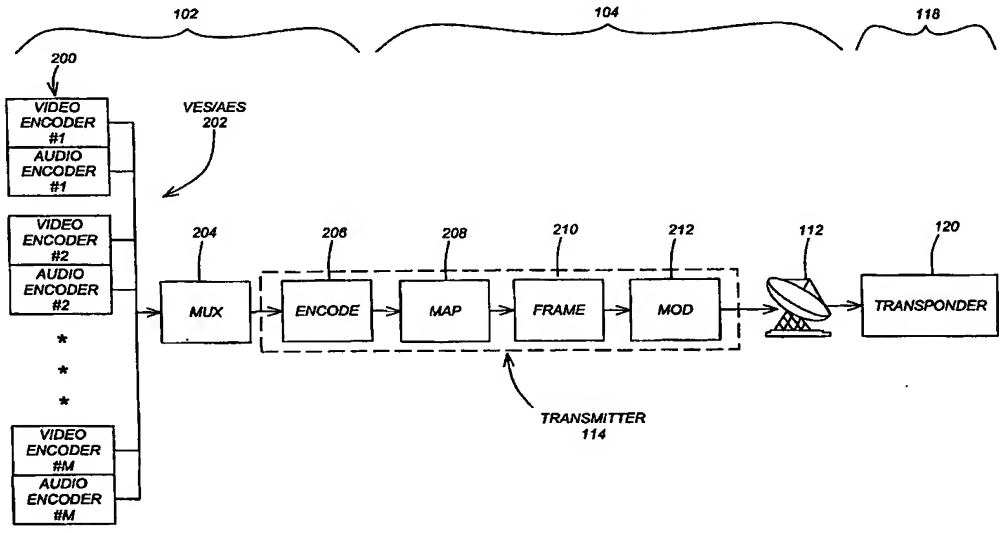
(54) Title: SIMPLIFIED SCRAMBLING SCHEME FOR SATELLITE BROADCASTING SYSTEMS



(57) Abstract: A simplified scrambling scheme that unifies all signals of a satellite broadcasting system, including frame header, frame body and pilot symbols with a common reference phase. This results in the simplification and increased flexibility of the receiver front-end design without affecting the overall system performance. In many current communications systems with frame headers and pilot symbols, the phases of frame headers and pilot symbols are not designed to be aligned with any constellation points of the modulated data from the frame body. This scrambling scheme takes into account possible impact due to irregular phase changes between frame headers/pilot symbols and modulated data.

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